

## **REMARKS**

Favorable reconsideration and allowance of this application are requested.

By way of the amendment instruction above, the inadvertent error with respect to the maximum  $M_n$  of the resultant PIB in claim 3 has been corrected. Support exists in the originally filed specification at, for example, page 4, line 13. Withdrawal of the rejection advanced against claims 3-11 under 35 USC §112, second paragraph is therefore in order.

Claims 1-14 remain pending herein for which favorable reconsideration is requested.

The only remaining issues to be resolved are the Examiner rejections of claims 1-2 and 12-14 under 35 USC §103(a) as allegedly unpatentable over Kropp et al (USP 6,069,281) in view of Rath et al (USP 5,286,823). Applicants respectfully suggest that neither Kropp et al nor Rath et al rejection is appropriate as a reference against the claims pending herein.

Applicants note that Kropp et al. (US 6,069,281) relates to mixtures of aminoalkanes which are obtained by reacting  $C_2$ - $C_6$ -olefins with a nitrogen oxide and subsequently hydrogenating the reaction product. Suitable  $C_2$ - $C_6$ -olefins are among others polyisobutenes with an average degree of polymerization  $P = 10$ -100 with a content of 60-90% terminal double bonds (see col. 7 lines 44-49). The aminoalkanes in Kropp et al are used so as to keep valves and carburetors or injection systems clean.

As to the polyisobutenes used as starting materials for producing the aminoalkanes, Kropp et al emphasize only that they should be highly reactive. Kropp et al is therefore totally silent about any specific recommended molecular weight distribution for such polyisobutenes. At column 5, lines 51-60, Kropp et al note that the polymers, such as polyisobutenes, have a particular range of degrees of polymerization. However, the disclosed variation has no discernible effect on the properties of the reaction product with

nitrogen oxides, so that only the average degree of polymerization P matters. This paragraph can also be interpreted in the sense that the molecular weight distribution of the resulting polymers is of *no significance* to the cleaning properties of the resulting aminoalkanes.

In the relevant examples Kropp et al, only polyisobutenes (PIBs) with a broad molecular weight distribution are used: Specifically, Kropp et al employ Glissopal® ES 3250 polyisobutene which the present applicant notes has a molecular weight distribution  $M_w/M_n$  of 1.7 and a vinylidene content of 80-85 %.<sup>1</sup> Kropp et al therefore does not consider the use polyisobutenes with a *narrow molecular weight distribution* even though PIBs with a narrow polydispersity were already known as of the filing date of Kropp et al (and even before its priority date), for example as evidenced by Rath et al.

Therefore, when reviewing Kropp et al under the mandates of 35 USC §103(a), an ordinarily skilled person would be cognizant that, although polyisobutenes with a narrow molecular weight distribution were already known *per se*, it would be apparent from Kropp et al that the molecular weight distribution of the polymers is *not* an important feature of the aminoalkanes which are produced according to the teachings of Kropp et al in terms of their fuel detergency effect.

Therefore, even though narrow molecular weight distribution polyisobutenes *per se* were known, the ordinarily skilled person would not be provided with any motivation to choose polyisobutenes with a low dispersity for producing polyisobutylamines for use as fuel detergent additives.

Moreover, as shown in the examples of the present application, the molecular weight distribution of the polyisobutene used as starting material is of significant importance for the fuel detergent properties of the resulting polyisobutylamines. This is a surprising effect which is not rendered obvious by Kropp in view of Rath.

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<sup>1</sup> A suitable factual Declaration to this effect could be submitted if the Examiner deems necessary.

**RATH et al**  
**Serial No. 10/508,397**  
January 11, 2007

Withdrawal of the rejection advanced under 35 USC §103(a) based on Kropp et al in view of Rath et al is therefore in order.

Every effort has been made to advance prosecution of this application to allowance. Therefore, in view of the amendments and remarks above, applicant suggests that all claims are in condition for allowance and Official Notice of the same is solicited.


Should any small matters remain outstanding, the Examiner is encouraged to telephone the Applicants' undersigned attorney so that the same may be resolved without the need for an additional written action and reply.

An early and favorable reply on the merits is awaited.

Respectfully submitted,

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